

## CHAPTER VIII

### Curtis Turbine

The British Thomson-Houston Co., Ltd., of Rugby, builds turbines on principles similar to those built by their parent company, the General Electric Company of America, the original manufacturers of the Curtis turbine. Their earlier designs consisted of two or more pressure stages,



Fig. 30.—Moving Blades for Curtis Turbines

each compounded for velocity, but later designs show one stage compounded for velocity, and the remainder as single-pressure stages.

Fig. 29 illustrates a 15,000-Kw. turbine designed to run at 1500 r.p.m. The same firm has built a 30,000-Kw. machine on similar lines, except that this consists of one velocity stage and fourteen pressure stages, against the sixteen stages shown for the 15,000-Kw. design. It will be seen that the disc diameters increase with succeeding stages with a view to obtaining an increase in blade area and blade speed corresponding as nearly as possible to the ideal conditions demanded by the expanding steam. The design is characterized by the retention of the single-flow principle at the low-pressure stages, notwithstanding the large blade area needed.

The moving blades are usually of phosphor bronze, the shorter blades

being cut from bars cold drawn to finished section. Longer blades are milled from heavier section bars, the roots being left at the full section to give greater strength; the blades then forming their own distance pieces.